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DIEDERIKS & WHITELAW, PLC  
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EXAMINER

KALIVODA, CHRISTOPHER M

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 12/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/995,662

Applicant(s)

BATEMAN ET AL.

Examiner

Christopher M. Kalivoda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 21-69 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33-66 is/are allowed.
- 6) ☒ Claim(s) 1-19, 21, 24-26, 27-32 and 67-69 is/are rejected.
- 7) ☒ Claim(s) 7, 22, 23, 25 and 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9. 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments, filed September 17, 2003 with respect to the rejection of claims 1-19 and 21-24 have been fully considered and are persuasive. The rejection of claims 19 and 21-24 has been withdrawn.

### ***Drawings***

The drawings were received on September 17, 2003. These drawings are approved.

### ***Claim Objections***

Claims 7, 25 and 32 are objected to because of the following informalities:

Regarding claim 7, lines 1-2 refer to the "AC-only" ion guide. However, claim 1 was amended to indicate just an "AC" ion guide.

Regarding claim 25, there appears to be a typographical error. It is believed group (iii) should be  $0.5 \pm 0.2$  and group (iv) should be  $0.7 \pm 0.1$  (see claim 59).

Regarding claim 32, there appears to be a typographical error. It is believed group (i) should be 1 mbar cm (see claim 31).

Appropriate correction is required.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11

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F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-19, 21, 24-26 and 27-32 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 09/930,294 (U.S. Publication 2002/0063210). Regarding claims 1-19, 21, 24 and 26-30, although the conflicting claims are not identical, they are not patentably distinct from each other because they are virtually identical except for the AC only and preferable mass analyzer.

Regarding claims 25, 31 and 32, it would have been obvious to one skilled in the art at the time the invention was made to modify the thickness of the ring electrodes to achieve the desired performance. In addition, the  $P \times L$  calculations (mean free path) are used in the design process.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 67 is rejected under 35 U.S.C. 102(e) as being anticipated by Smith, et al. U.S. Patent 6,107,628. Regarding independent claim 67, Smith et al teach a mass spectrometer comprising an ion source for producing ions (col 5, line 42-46) an input vacuum chamber incorporating an ion guide for transmitting ions (Fig 5, ref sign 514 and Fig 1, Fig 3 and Fig 5), said ion guide including a plurality of electrodes having apertures, said apertures being aligned so that the ions travel through the apertures as the ions are transmitted by the guide (col 4, lines 12-15 and Fig 5) an analyzer vacuum chamber incorporating a mass analyzer disposed to receive ions transmitted by the ion guide (col 5, lines 40-46) a differential pumping apertured electrode through which ions may pass said differential pumping electrode being disposed between said input vacuum chamber and said analyzer vacuum chamber with said analyzer vacuum chamber being at a lower pressure than said input vacuum chamber (col 5, lines 47-53).

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 68 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. U.S. Patent 6,107,628 in view of Franzen, 5,818,055. Regarding claim 68, Smith et al. teach the limitations of claim 67 as described above. However, the reference is silent with respect to the analyzer vacuum chamber containing an additional ion guide.

Franzen et al teaches placing an ion guide just before an ion trap mass spectrometer in the analyzer vacuum. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the invention of Smith et al. to include an additional ion guide in the analyzer chamber.

The motivation for including an additional ion guide in the analyzer vacuum is to ensure as many ions as possible are injected into the mass analyzer (col 1, lines 20-28 and col 3, lines 1-5).

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Regarding claim 69, Smith et al. teach the ion mass analyzer constitutes a quadrupole mass filter (col 1, lines 38-42) and the ion guide constitutes a pre-filter since the appropriate voltages are applied (col 4, lines 35-39, lines 47-51 and lines 53-57).

***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter regarding claims 22 and 33-66. Claims 22 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Regarding claim 22, a review of prior art failed to disclose or make obvious a mass spectrometer comprising an input vacuum chamber comprising at least one AC ion guide for transmitting ions wherein the ion guide comprises a longitudinally extending member having a plurality of electrodes depending therefrom.

Regarding independent claim 33 and 60, a review of prior art failed to disclose or make obvious a mass spectrometer comprising an input vacuum chamber comprising at least one AC ion guide for transmitting ions wherein the ion guide comprises two interleaved comb arrangements, each said comb arrangement comprising a plurality of electrodes having apertures.

Claims 34-59 would be allowable because they depend upon claim 33 or claims that depend upon claim 33.

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Claims 61-66 would be allowable because they depend upon claim 60 or claims that depend upon claim 60.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Kalivoda whose telephone number is (703)-305-7443. The examiner can normally be reached on Monday - Friday (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (703)-308-4116. The fax phone number for the organization where this application or proceeding is assigned is (703)-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.

cmk  
November 24, 2003



JOHN R. LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800